Phylogenetic relationship of intertidal Xestoleberis (Podocopida : Ostracoda) along the North Pacific coasts

Phylogenetic relationship of intertidal *Xestoleberis* (Podocopida : Ostracoda) along the North Pacific coasts

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Xestoleberis belongs to family Xestoleberidae, one of the cytheroidean Ostracoda. The genus *Xestoleberis* appeared during the Cretaceous and is presently distributed from tropical to subarctic areas all over the world. However, the phylogenetic relationships of *Xestoleberis* and its biogeographical distribution have been little studied around Japan or other areas except North Atlantic (Elofson, 1941).

A total of twenty-three *Xestoleberis* species, collected from the intertidal zone on the east and west coasts of the North Pacific, were divided into three groups (Groups A, B and C) based on the type of morphology of the pore-systems. Each of the three groups has its own features in the shape of the frontal muscle scar, median element of hingement, morphology of *Xestoleberis*-spot and male reproductive organ, and it was considered that the three groups were phylogenetically different. The distributional pattern of pore-systems (DDP analysis; *e.g.* Ishii et al., 2005) of thirteen Japanese *Xestoleberis* species from the three groups (7 species from Group A, 2 species from Group B and 4 species from Group C) were examined and their phylogenetic relationships reconstructed

Each of the three groups also has different biogeographical distributions. Group A has the widest distribution, found from low to middle latitudes (Philippines, Japan including the southern Ryukyu and Bonin Islands, Mexico and U. S. A.) and Group B is distributed in the low latitudes of the North Pacific. These two groups are Pan-Pacific or cosmopolitan. To the contrary, the distribution of Group C species is mainly limited to the middle latitudes of the middle and northern coasts of Japan. The four species of Group C have different geographical distributions related to marine climates, namely subtropical, warm-cool temperate, medium-cool temperate and subarctic. Group C seems to be a unique species group containing species that have adapted to cooler areas, possibly through the Japan Sea and the Okhotsk Sea.

"References"

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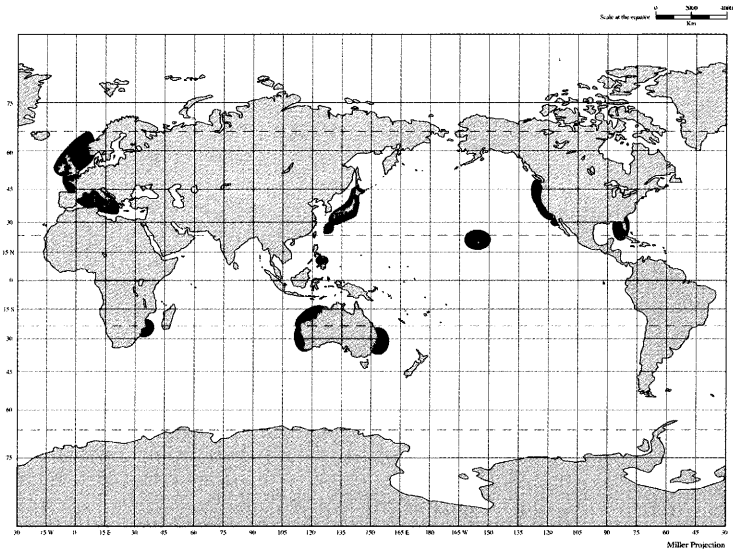

Fig. 1-a Geographical distributions of Group A species.

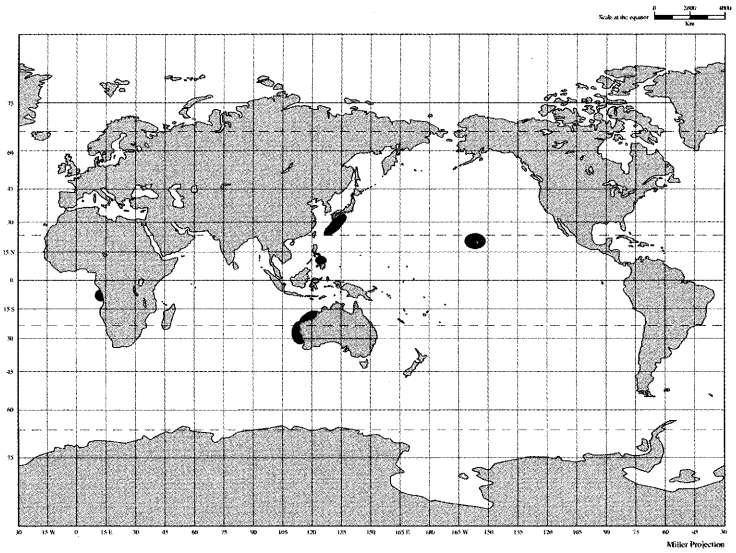

Fig. 1-b Geographical distributions of Group B species.

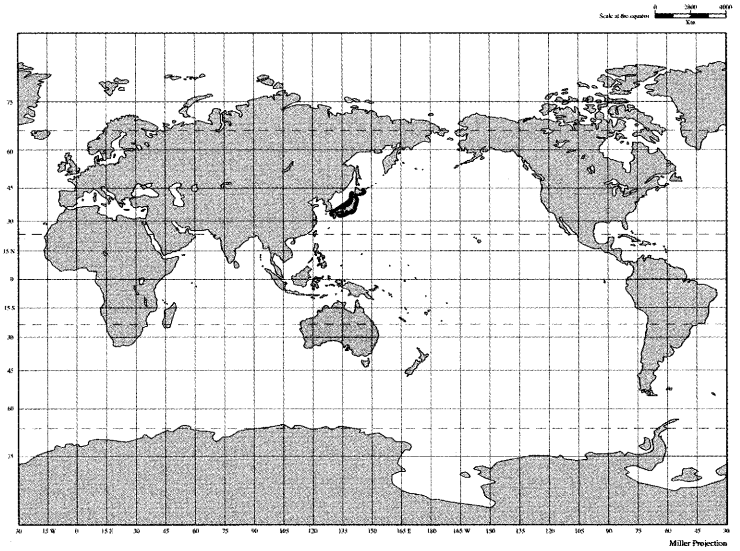

Fig. 1-c Geographical distributions of Group C species.